

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listing of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A method of allocating computer resources in a virtual machine system, which includes one or more CPUs, a main storage and an I/O control unit, said main storage storing an active OS, a standby OS, a virtual machine monitor and application programs to be executed by the CPUs, said method realized by the virtual machine monitor comprising the steps of:

~~providing an active VM and a standby VM;~~ —

allocating a main storage area sufficient to execute ~~a certain~~ the application programs to be executed under the active OS to the active VMOS; and

~~allocating a smaller~~ main storage area insufficient to execute the application programs to the standby VMOS; and

when a failure ~~fault occurs~~ in the active VMOS is detected, reallocating ~~attaching~~ a part or all of the main storage area occupied by ~~allocated to~~ both the active VMOS and the application programs to the standby VMOS.

2. (Currently Amended) ~~The~~ A method of allocating computer resources in the virtual machine system according to claim 1, said virtual machine system further including an auxiliary memory for storing hot standby application programs

performing the same application as the application programs, further comprising the steps of:

~~providing a hot standby application program performing the same application as the certain application program in an auxiliary memory; and~~

~~when a failure ~~fault occurs~~ in the active VMOS is detected, reallocating attaching a main storage area occupied by ~~allocated to the~~ application programs certain program to the standby VM<sub>OS</sub>; and~~

~~allowing the standby OS to execute ~~executing the~~ hot standby application programs using the main storage area ~~allocated to the~~ standby OS of the standby VM.~~

3. (Currently Amended) ~~The~~A method of allocating computer resources in the virtual machine system according to claim 1,

~~wherein the virtual machine system has a virtual machine monitor to control plural OSs, which provides~~said main storage further storing a resource management table which contains the ~~respective~~ use amounts of main storage for each of OSs, ~~the virtual machine monitor, the~~ application programs; a name of the active OS controlling the execution of each of the application programs; and a name of the standby OS to take over the use amounts of the main storage allocated to a part or all of the application programs when the failure occurs, and unused areas; OSs or virtual machine monitor that uses the areas;

~~\_\_\_\_\_ and OSs or virtual machine monitor as target systems to change in abnormal status; and further comprising the steps of:~~

~~\_\_\_\_\_ when the failure in the active OS is detected, referring to the resource management table; and~~

~~\_\_\_\_\_ issuing a request to the standby OS to take over the use amounts of the main storage as much as the resource management table indicates.~~

~~\_\_\_\_\_ wherein the virtual machine monitor, when a fault occurs in the active VM, refers to the resource management table and issues a request to attach the use amount of a required main storage area to a recorded target system to change in abnormal status.~~

4. (Currently Amended) A method of allocating computer resources in a virtual machine system, which includes one or more CPUs, a main storage and an I/O control unit, said main storage storing an active OS, a standby OS, a virtual machine monitor and application programs to be executed by the CPUs; and information about an amount of main storage used by each of the application programs under control of the active OS, said method realized by the virtual machine monitor comprising the steps of:

~~\_\_\_\_\_ providing an active OS and a standby OS; and~~

~~\_\_\_\_\_ recording uses of main storage allocated to the active OS;~~

~~\_\_\_\_\_ when a failure in an application program executed under the active OS is~~

detected, referring to the information; and reallocating a main storage area occupied by the application program in failure to the standby OS, thereby allowing the standby OS to execute an application program performing the same application as the application program in failure.

~~when a fault occurs in an application program operating on the active OS, referring to the recorded uses and reallocating main storage used by the failing application program to the standby OS, thereby executing an application program performing the same application as the application program that failed in the active OS.~~

5. (Currently Amended) A method of allocating computer resources in a virtual machine system which includes one or more CPUs, a main storage and an I/O control unit, said main storage storing an active OS, a standby OS, a virtual machine monitor and one or more application programs to be executed by the CPUs, said application programs including application programs for a hot standby job to be executed under the standby OS upon detecting failure of a system controlled by the active OS, said method realized by the active OS comprising the steps of:~~having a virtual machine monitor controlling plural OSs,~~

~~wherein an active OS calculates computer resources used for execution of one or more application programs, including an application program of a hot standby job in which a program performing a same application is executed under the~~

~~standby OS when a fault occurs, and if resources are sufficient for execution of said application programs, notifying, notifies the virtual machine monitor of which application program is using which resource; and~~  
~~\_\_\_\_\_ if resources are insufficient, obtains a obtaining new resources from the virtual machine monitor; and,~~  
~~\_\_\_\_\_ said method realized by the virtual machine monitor comprising the step of:~~  
~~\_\_\_\_\_ when a failure in the active OS or the application programs for a hot standby job is detected, issuing to the standby OS a request to take over the resources occupied by the application programs for the hot standby job.~~  
~~\_\_\_\_\_ wherein, when a fault occurs in an application program of the active OS or the hot standby job, the virtual machine monitor issues to the standby OS a request to attach a resource having being used by the application program of at least the hot standby job to the standby OS.~~

6. (Currently Amended) A method of allocating computer resources in a single computer system which includes one or more CPUs, a main storage and an I/O control unit, said main storage storing a first OS, a second OS, a virtual machine monitor, a first application program and a second application program to be executed by the CPUs, said second application program performing the same application as said first application program, said method realized by the first OS comprising the steps of: ~~virtual machine system, for exclusively executing plural programs~~

~~performing same applications by using a single computer system which has plural OSs, a virtual machine monitor controlling the plural OSs, and resources including main storage,~~

~~wherein a first OS of the plural OSs reports a resource allocated to a~~reporting  
resources allocated to the first application program operating on the first OS to the  
virtual machine monitor;<sub>i</sub> and

~~\_\_\_\_\_ upon detecting a fault~~failure of the first application program, reporting reports  
the fact to the virtual machine monitor;<sub>i</sub>

~~\_\_\_\_\_ said method realized by the virtual machine monitor comprising the steps of:~~

~~wherein, upon receipt of a fault~~failure detection report from the first OS, the  
virtual machine monitor ~~disconnects the resource~~disconnecting the resources  
having been used by the first application program from the first OS;<sub>i</sub>

~~\_\_\_\_\_ allocates~~allocating the resources disconnected to a the second OS;<sub>i</sub> and

~~\_\_\_\_\_ requests~~requesting the second OS to activate ~~initiate a~~ the second application  
program performing the same application as the first application program; and<sub>1</sub>

~~said method realized by the second OS comprising the step of wherein the~~  
~~second as allocates a resource~~allocating the resources used by the second  
application program when initiated, from the allocated resources.

7. (Currently Amended) A method of allocating computer resources in a  
single computer system which includes one or more CPUs, a main storage and an

I/O control unit, said main storage storing a first OS, a second OS, a virtual machine monitor, a first application program and a second application program to be executed by the CPUs, said second application program performing the same application as said first application program, said method realized by the first OS comprising the steps of: ~~virtual machine system, for exclusively executing plural programs performing same applications by using a single computer system which has plural OSs, a virtual machine monitor controlling the plural OSs, and resources including main storage,~~

~~wherein a first as of the plural ass reports a resource allocated to a~~ reporting resources allocated to the first application program operating on the first OS to the virtual machine monitor;

\_\_\_\_\_ said method realized by the virtual machine monitor comprising the step of:

~~wherein, upon detecting a failure~~ fault ~~of the first OS, the virtual machine monitor allocates~~ allocating ~~a part or all of resources having been used by the first OS to a~~ the ~~second OS;~~ and

\_\_\_\_\_ requests ~~requesting~~ the second OS to activate ~~initiate a~~ the ~~second application program performing the same application as the first application program; and~~

~~wherein the second as allocates a resource~~ allocating the resources ~~used by the second application program when initiated, from the allocated resources.~~

8. (Currently Amended) A method of allocating computer resources in the

~~single computer virtual machine~~ system according to claim 6, wherein, where the first OS and the second OS are in standby configuration, when the first OS detects the failure of the first ~~a fault is detected in an application program operating on the first~~ as, the virtual machine monitor requests the second OS to activate the ~~a second~~ application program is ~~run on the second as only~~ when the first ~~failing~~ application program is executed in a hot standby job.

9. (Currently Amended) A virtual machine system which includes one or more CPUs, a main storage and an I/O control unit, said main storage storing an active OS, a standby OS, a virtual machine monitor and application programs to be executed by the CPUs~~comprises an active as, a standby as, and a virtual machine monitor controlling plural OSs,~~

~~wherein the active as includes at least:~~ said active OS including a fault level notification routine that monitors fault levels of the application programs executed under the active OS, and when a fault is unrecoverable, reports the fact to the virtual machine monitor; and a resource disconnection routine that, upon receipt of a request to disconnect a resources allocated to the active OS from the virtual machine monitor, disconnects the requested resources;

said standby OS including ~~wherein the standby OS includes~~ a resource engaging routine that, upon receipt of a request to newly attach a resources from the virtual machine monitor, attaches the requested resources to the standby~~that~~ OS



itself; and

said virtual machine monitor including wherein the virtual machine monitor  
~~includes:~~ an OS fault detecting routine that detects a fault of the active OS; a means  
that, upon detecting a fault of the active OS, finds a-resources to be reallocated to  
the standby OS and reports a~~the~~ resources to be newly attached to the standby OS;  
a means that, upon receipt, from the active OS, of notification that a~~the~~ application  
programs are ~~is~~-faulty, finds a-resources to be disconnected and reports it~~them~~ to  
the active OS; and a means that, after completion of disconnecting the resources,  
reports a~~the~~ resources to be newly attached to the standby OS.